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Perceptions of Clinical Instructors and Respiratory Therapy Students on Effective Teaching Characteristics of Clinical Instructors in Saudi Arabian Universities

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ACCEPTANCE

This thesis, PERCEPTIONS OF CLINICAL INSTRUCTORS AND RESPIRATORY THERAPY STUDENTS ON EFFECTIVE TEACHING CHARACTERISTICS OF CLINICAL INSTRUCTORS IN SAUDI ARABIAN UNIVERSITIES, by Fahad Alahmadi, RRT-NPS, was prepared under the direction of the Master's Thesis Advisory Committee of the Respiratory Therapy department at Georgia State University. The committee in partial fulfillment of requirements accepts it for the Master's of Science degree in Respiratory Therapy at Byrdine F. Lewis School of Nursing and Health Professions, Georgia State University.

The Master's Thesis Advisory Committee, as representatives of the faculty, certifies that this thesis has met all standards of excellence and scholarship as determined by the faculty.

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DEDICATION

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ABSTRACT

BACKGROUND: A crucial area of professional respiratory therapy (RT) education is clinical training. The aim of this study is to determine the perceptions of both clinical instructors (CIs) and baccalaureate degree RT students on the effective characteristics of CIs working at three universities in Saudi Arabia.

METHODS: 141 RT students and 15 CIs in the Department of Respiratory Therapy at Prince Sultan Military College Of Health Sciences, University Of Dammam, King Saud University Of Health Sciences in Saudi Arabia were surveyed in this study. The survey participants were asked to rank the teaching characteristics of CIs according to its importance. The survey questions were composed of 18 teaching behaviors ranked on a five-point Likert scale (5: most important, 4: important, 3: neutral/uncertain, 2: less important and 1:unimportant). Descriptive statistics and independent sample t-test were used for data analysis. A significance level was set at 0.05.

RESULTS: The response rate of this study was 71% for RT students and 72% for CIs, respectively. Sixty-eight percent of the students were male, while thirty-two percent were female students. Also, thirty-three percent (33%) of CIs were male, and sixty-seven percent consisted of female CIs. Although both RT students and CIs ranked "competency on demonstrating knowledge" as the most important teaching characteristic of CIs, the rest of their ranking showed differences. While the first 3 ranking of CIs included only teaching competencies of CIs, RT students ranked competency, evaluation skills and teaching ability of CIs as the most important teaching characteristics of CIs. According to RT students and CIs participated in this study, 4:1 is the best student:clinical instructor ratio for optimum clinical learning experience in respiratory therapy education in Saudi Arabia. Also, ranking obtained from junior and senior RT students were statistically different in seven out of the eighteen teaching characteristics of CIs ($p<0.05$).

CONCLUSION: Competence on demonstrating knowledge was identified as the leading characteristics of CIs by RT students and CIs. However, their ranking on teaching characteristics of CIs differs. There are significant differences between the perceptions of junior and senior RT students on effective teaching characteristics of CIs. Further research is warranted.

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LIST OF ABBREVIATIONS

BSRT: Bachelor of Science in Respiratory Therapy

CI: Clinical instructor.

CoARC: The Commission on Accreditation for Respiratory Care

CoBGRTE: The Coalition for Baccalaureate and Graduate Respiratory Therapy Education

CTCI: Clinical Teacher Characteristics Instrument

ECTB: Effective Teaching Clinical Behaviors

ERCIC: Effective Radiography Clinical Instructor Characteristics.

KSU-HS: King Saud University of health Sciences.

KSU-HS: King Saud University of Health Sciences.

NCTEI: Nursing Clinical Teaching Effectiveness Inventory

PSMCHS: Prince Sultan Military College of Health Sciences.

PSMCHS: Prince Sultan Military College of Health Sciences.

RT: Respiratory Therapy.

UOD: University of Dammam.

Chapter 1

Introduction

Respiratory therapy (RT) is a specialized area of health care service that offers therapeutic and diagnostic services to patients with cardiopulmonary disorders. The *United States Department of Labor* reports that there were about 119 thousand jobs related to respiratory care and that it is expected to grow up to 143,000 by 2020 (Bureau of Labor Statistics, 2012). Meanwhile, the *Commission on Accreditation for Respiratory Care* (CoARC), which recognizes and certifies respiratory care academic programs, reveals there are 451 academic programs that endorse respiratory care programs at Associate, Baccalaureate, and Master's degree levels in the U.S. alone. Furthermore, a career in respiratory care continues to advance from the rendition of basic duties like the facilitation of breathing treatment and oxygen therapy to various responsibilities such as cardio-respiratory therapy and diagnosis, which include mechanical ventilation, chest physical therapy, pulmonary function testing, and bronchoscopies (Galvin, 1997). Other respiratory care services include diagnosis of sleeping disorders and cardiac problems. Despite the vast numbers of bachelor or associate degrees in respiratory therapy, standard clinical education remains to be significantly needed.

Clinical education is a crucial part of the teaching and learning aspects of respiratory care programs. This is because of its immense influence on the way students think and acquire necessary problem-solving skills in the clinical setting. According to a paper published by the *Coalition for Baccalaureate and Graduate Respiratory Therapy Education* (CoBGRTE) in 2010, an undergraduate respiratory therapy student is required to complete a total of 937 hours of clinical rotation. By their second year, majority of respiratory therapy students begin their clinical rotation, which helps the students become more familiar with the hospital setting and environment. However, each kind and

particular duration of these programs differs with regards to the kind of clinical experience it aims to provide the students. Since the CoARC entails these programs to document the student's competencies in terms of compliance, evaluation, and scoring during the students' hospital rotations and internship, the CoARC necessitates standards and clinical rotation duration to be discussed (CoARC Standards, 2010). As a result, the clinical education requirements vary in one program to the next in different states (Barnes, Kacemareck, Durbin, 2010).

In relation, during the 1980s, the respiratory care profession in the Kingdom of Saudi Arabia began to apply U.S. standards. The Loma Linda University's out-of-campus program developed a respiratory therapy training program headquarters at the *Prince Sultan Cardiac Research Center* in Riyadh wherein 75 students were eligible to graduate according to the *National Board for Respiratory Care*'s (NBRC) official records (Saudi Arabian Cultural Mission to the U.S., 2011). Other respiratory therapy programs sanctioned by the American Association for Respiratory Care (AARC) in Saudi Arabia are the *Prince Sultan Military College of Health Science* in Dharahan (PSMCHS), the *Dammam University (UOD)*, and the King Saud University for Health Sciences (KSU-HS).

In the Kingdom of Saudi Arabia, allied health programs that last for four years are presented on lectures and laboratory sessions, alongside inadequate clinical exposure. Similarly, the clinical exposure that students experience in traditional schools is usually given during the students' last semester in the latter parts of the program. While the first years of medical education focuses on basic scientific and medical knowledge, clinical teaching, which mostly consists of bedside demonstration, is only given during the last two years of medical education. However, such clinical teaching model is now evolving since medical education is rapidly changing in response to the developments in health care delivery systems.

On the other hand, numerous recent studies found there is inadequate information and research that addresses how the behavioral characteristics of clinical instructions affect the students' acquisition of knowledge and skills. In nursing education, for example, the studies stress the correlation between the students' and the faculty's perception regarding the importance of behavioral characteristics in both teaching and in student learning (Benor & Leviyof, 1997; Brown, 1981; Knox & Morgan, 1985; Kotzabassaki, Panou, Dimou, Karabagli, & Ikonomou, 1997; Kube, 2010; O'Shea & Parsons, 1979; Tang, Chou, & Chiang, 2005; Lee, Cholowski, & Williams, 2002). Meanwhile, *preceptorship* is the teaching model preferred by both undergraduate and graduate students in allied health education. Respiratory therapy students, in particular, appear to prefer preceptorship because of its great impact on the development of specific skills beyond what the classroom or the laboratory teaching can offer (Rye & Boone, 2009). An example of this is how preceptorship allows the students to make critical decisions related to management and troubleshooting of mechanical ventilation. In such case, clinical instructions become crucial instruments in the process. However, respiratory therapy students oftentimes cannot successfully complete rotations because of the unavailability of their instructor (Cullen, 2005). Likewise, many respiratory therapists that are asked to precept the students feel unprepared to teach, which only hinders them from providing sufficient clinical knowledge and support in teaching the students (Rye & Boone, 2009; Cullen, 2005).

In order for higher quality and standards of clinical education in respiratory care to be achieved, behavioral characteristics of clinical instructors should be fully investigated because it is found to affect the students' ability to learn. These behavioral characteristics of clinical instructors such as competence, teaching ability, evaluation skills and interpersonal relations that affect student learning must be fully investigated. In the end, there is an urgent need to determine the effective behavioral characteristics of clinical instructors as identified by students in respiratory care education.

Significance of the Study

This study aims to provide additional information about the of effective behavioral characteristics of clinical instructors as identified by students. This aids to promote valuable information about the use of techniques that are meant to measure and to promote effective behavioral characteristics of respiratory therapy clinical instructors, as well as advance the developments in respiratory therapy clinical education in line with preceptorship.

Clinical instruction is essential in providing the students with the opportunity to apply their knowledge, skills, and clinical concepts through theoretical clinical lectures about the practical rendition of physical care to the patients and according to how clinical education is applied. Thus, CIs may either positively or negatively impact the performance of the students during clinical practice. Additionally, the behavioral characteristics of a clinical instructor are an important part of the students' learning performance and success at clinical. In Saudi Arabia, respiratory therapy education lacks research and studies that mention how the clinical instructors' and the students' behavioral characteristics impact and influence student learning. Therefore, both the clinical instructors and the respiratory students' perceptions regarding desirable behavioral characteristics in the clinical setting will help address this insufficiency in research and allow the exploration of behavioral characteristics that can indicate how clinical teaching can be modified, facilitated, and taught better in line with respiratory therapy programs.

Conclusively, this study will support the advancement of respiratory therapy clinical education by providing data on how to apply different instruments or strategies to evaluate the effectiveness of the clinical instructors based on their perceptions.

Purpose of the study

The purpose of this study is to identify the perceptions of both CIs and (RT) students at various academic levels in Saudi Arabia, particularly the effective characteristics of clinical instructors. Below are the research questions that were answered in this study:

1. Which characteristics of effective clinical instructors are recognized to be most important by respiratory therapy students?
2. Which characteristics of effective clinical instructors are recognized to be most important by clinical instructors?
3. How do students' perceptions vary depending on clinical hours they spend in their program of study?

Assumptions

The following assumptions will be used in this study:

1. The students' evaluations of clinical instructors are used frequently and are generally considered valid measures (Hassan, 2009; Raingruber & Bowles, 2000; Zimmerman & Westfall, 1988).
2. The identification and encouragement effective qualities, characteristics, behaviors and actions that contribute to the clinical success of the students are important (Ingrassia, 2011).
3. Effective clinical instruction requires outstanding teaching characteristics to promote learning (Koss, 2003).

Chapter II

Review Of The Literature

Various studies have evaluated the characteristics and behaviors of clinical instructors in different allied health programs like in the fields of nursing, physical therapy, athletic training, and radiography. It has been found that respiratory therapy has insufficient amounts of research regarding this topic. However, many studies can be related to it. The purpose of this literature review is to determine the effective behavioral characteristics of clinical instructors, particularly because it will lead to successful clinical experiences and will help clinical instructors to avoid undesirable clinical experiences and help correct ineffective behavioral characteristics.

An internet literature search using database accessed for this review included the following: PubMed, CINHAL, Ovid, ProQuest, Medline, and EBSCOhost. Meanwhile, search keywords utilized include clinical education, clinical education in Saudi Arabia, clinical instructor, allied health education, respiratory care, respiratory therapy, nursing, physical therapy, pharmacy, athletic training, medicine, and radiography. The search involving the clinical education of different health professions was primarily limited to the previous five years, which resulted into fifty articles. On the other hand, the time frame was lengthened in order to acquire in-depth research. Additionally, the classification of articles is limited to peer-reviewed journal articles, which yielded a reduced number of twenty-eight articles discussing effective clinical instruction and student perceptions.

Clinical Education in Nursing

Clinical education's main goal is to develop professional skills and knowledge among the students. It requires a life-long pursuit to learn and hone critical thinking, as well as increase self-confidence and independent decision-making in the students' chosen field (Nolan, 1998; Löfmark and Wikblad, 2001; Sundstrom, 2000; Papp et al., 2003). Clinical nursing education experienced vast revolutionary changes during the 20th century (Tang, 2005). Numerous factors have placed an impact on clinical nursing education, including transition from apprenticeship to faculty responsibility; free labor to educational accountability; and the authority of teachers to students demanding for their rights (Camiah, 1998). Generally speaking, the clinical aspect of a discipline-based practice, such as in the case of nursing, is considered a significant part of the developing competent practitioners (Gaberson & Oermann, 1999; Horst, 1988; Oermann, 1996; Oermann & Standfest, 1997; Wang & Blumberg, 1983). Clinical education offers the students the chance to translate conceptual knowledge into intellectual and psychological skills, which are then applied to dynamic patient care (Firoozehchian, 2012).

Preceptor experiences that are explored prior and after the introduction of a particular preceptorship model found that preceptors experienced challenges in balancing between precepting a student and rendering patient care (Yonge et al., 2002). In addition, scholars discovered that preceptor experiences increases stress and workload, as well as reduce the time spent with their patients and little benefit whenever teaching an undergraduate student (Flanagan & Clarke, 2009; Walker et al., 2008).

Moreover, the utilization of clinical staff to facilitate the students' learning in the clinical setting has been widely done. Thus, it is significant for a mentor-mentee relationship between clinically skilled nurses and nursing students to be established in order to support and aid the

students in acquiring clinical competence, necessary skills, a smooth transition to the actual workplace setting, and heightening their decision-making abilities (Yates et al., 1997; Northcott, 2000). Despite being an important factor in preparing students in becoming professionals, academic staff usually supervise majority of the clinical placements for nursing graduates in numerous countries.

Nonetheless, nursing instructions are deemed responsible for making sure that the nursing students learn to apply the theories taught, acquire hands-on experience, develop professional maturity, and practice specific nursing techniques (Clayton, Lypek, & Connelly, 2000). Similarly, nursing educators should guarantee that the patients still receive high-quality and safe nurse care (DeLong & Bechtel, 1999). In the end, interpersonal relationship skills, professional competence, teaching ability, and personality and behavioral characteristics must be prioritized among clinical nursing instructors.

However, faculty members are also held liable for clinical teaching since they are expected to establish a positive environment wherein students and members of the faculty can build a close working relationship. The members of the faculty also have a significant role in influencing and motivating the students in either feeling successful or not (Davidhizar & McBride, 1985). On the other hand, faculty members oftentimes do not have the crucial, advanced clinical skills needed at the bedside (Udlis, 2006).

Clinical Instructor Characteristics Instruments

Various instruments to assess the effectiveness of teachers are found in numerous allied health literatures. In nursing, these tools were devised primarily by nursing teaching faculty to be used in their respective universities. One of these characteristics instruments is the *Clinical Teacher Characteristics Instrument* (CTCI), which was designed by Brown in 1981. It was

intended to determine the characteristics of effective clinical instructors. Based on this study, 82 senior level baccalaureate nursing students and 42 faculty members at a baccalaureate nursing program in North Carolina were compared to find out if there were any similarities between the perceptions of the students and the teachers regarding what constitutes effective clinical teaching characteristics. Brown believed that the perceptions of the students and of the faculty were comparable with one another. To determine the validity of his hypothesis, he created a tool and divided it into two sections: (1) a 20-item Clinical Teacher Characteristic Instrument (CTCI) that categorized the characteristics according to professional competence, relationship with the students, and personal attributes; and (2) questions that asked the respondents to select among the five characteristics they find to be important and rank them based on what they think was more important. The results of the study revealed that the students ranked their relationship with their clinical instructors as the most important – which also rejected Brown's hypothesis. Secondly, students identified the following characteristics as most significant: (1) well informed and communicated knowledge to students; (2) objective and fair in the evaluation of the student; (3) showed genuine interest in patients and their care; (4) conveyed confidence in and respect for the student; and (5) encouraged students to feel free to ask questions or to ask for help (Brown, 1981). Thus, the study's findings posit that the students and the faculty members differ in what they believe are effective clinical teaching behaviors.

In relation, the study led by Brown (1981) was imitated by numerous scholars but each used a different culture (Bergman & Gaitskill, 1990; Nahas, Nour, & al-Nobani, 1999). For example, Nahas et al. (1999) did a study that investigated the perceptions of Jordanian undergraduate nursing students regarding effective clinical characteristics of their clinical instructors. The study revealed that Jordanian nursing students' perception of important clinical

teaching characteristics differed from their Western counterparts because they valued the professional competence of their clinical instructors more than their interpersonal skills and personal attributes, which are more significant among nursing students in Western countries (Nahas et al., 1999).

A general research theme that has evolved involves categorizing clinical teaching behavior as either effective or ineffective with regards to the utilization of teaching behaviors. Knox and Mogan (1985) established an instrument to gauge the effectiveness of teaching characteristics in the field of nursing. This tool is referred to as the *Nursing Clinical Teaching Effectiveness Inventory* (NCTEI) that compares the significance of five categories of clinical teacher characteristics according to university nursing faculty members, students, and professional nursing graduates. The researchers did an exploratory study at the University of British Colombia in Canada to determine the crucial clinical teaching behaviors, which involved 393 baccalaureate nursing students, 49 clinical instructors, and 45 graduated nurses. Through the use of a 5-point Likert scale (1= not important at all to 5 = very important), a 48-item survey about clinical teaching characteristics and behavior tool was disseminated. In the same way, the different categories included: (1) teaching ability; (2) nursing competence; (3) evaluation; (4) interpersonal relationships; and (5) personality. The results revealed that the instrument reliability coefficients ranged from alpha = 0.79 to 0.89 while the analysis of variance of the responses of the six groups revealed a great difference for all five categories of teacher behavior (Knox & Mogan, 1985).

Additionally, the results revealed that junior level baccalaureate degree nursing students that rated the evaluation imply that demonstration of objectivity and fairness, provision of timely feedback, and provision of constructive criticism were the most important teaching behavior and

characteristics for them. On the other hand, graduates and practicing nurses rated nursing competence as significantly more important in contrast to second-year students. Meanwhile, interpersonal relationship and personality categories received the biggest difference between the ratings. In the end, the study concludes that evaluation (93%) was the most important attribute for clinical instructors and personality characteristics (86 to 87%) were the least important. The study proved similar findings to those discovered by Brown (1981) (Knox & Mogan, 1985).

Furthermore, Knox and Mogan (1987) published yet again another study that helped establish the first NCTEI (1985) and used the same instrument to advance their clinical teaching characteristic instrument. They accomplished this by determining and comparing the best and the worst characteristics of clinical instructors. Seven nursing schools with 173 total students at three different academic levels including second year to fourth year students, in addition to 28 faculty members, were participants. As a result, the study proved that both groups of students and faculty members perceived good role modeling, demonstration of mutual respect, and approachability as the highest or best characteristics of instructors (Knox & Mogan, 1987).

Another set of researchers simulated descriptive study that aimed to identify the best and the worst characteristics of clinical instructors (Knox & Mogan, 1987). Nehring (1990) and Kotzabassaki et al. (1997) reproduced similar perceptions made by the faculty and the students that were found in Knox' and Mogan's (1987) study. The researchers found similar findings that further confirm the validity and reliability of the tool over time and with various samples (Nehring, 1990). In Israel, Benor and Leviyof (1997) disseminated their survey to 123 students at three different nursing schools and used a modified version of the NCTEI. They aimed to determine the perception of students of what characteristics were ideal, best, and poorest clinical

teachers. Their research revealed that the best teacher characteristics were nursing competency while interpersonal skills were the least important for the students (Benor & Leviyof, 1997).

In the end, these studies prove that the NCTEI revealed common and similar results through various settings. However, it also exposes the lack of significant statistical differences between the ratings of students and of faculty clinical instructor ratings pertaining to clinical instructor behavior (Lee, Cholowski, & Williams, 2002; Li, 1997; Sieh & Bell, 1994).

Lastly, the *Effective Teaching Clinical Behaviors* (ECTB) is another instrument developed by Zimmerman and Westfall in 1988. It included 43 items that was based on a 5-point Likert scale and involved 281 nursing students from baccalaureate and diploma programs. The instrument's goal is to evaluate the validity of the ECTB and assess internal consistency and test-retest reliability of the scale. The researchers attest that the ECTB instrument was valid (Zimmerman & Westfall, 1988).

Clinical Education in Respiratory Therapy

In the previous years, a growing interest in the utilization of volunteer clinical preceptors has been observed. This attention was due to the objective of providing clinical instruction to respiratory therapy students. *Preceptorship* is a term that refers to a condition wherein a learner works together with a professional practicing clinician. It is the chosen model for clinical teaching in most undergraduate and postgraduate health care profession or field. Preceptors nowadays have a vital role in teaching the next generation of respiratory therapists at the bedside. On the other hand, preceptors are deemed unable to offer excellent clinical instruction without the proper training and support (Rye & Boone, 2009). Thus, there is also an increasing concern over the preparation of respiratory therapy preceptors and the need to increase preceptor

awareness in respiratory therapy, particularly with the critical learning process in clinical education (Rye & Boone, 2009).

Respiratory care preceptorship has garnered numerous studies in the past. Among the early published articles in *Respiratory Care Education Annual Journal*, Rye, Boone, and Neal-Rice (2007) devised a preceptor training program that was given to 45 respiratory practitioners working at a children's hospital in Arkansas. The researchers' goal was to define the preceptor's role, the needs of the students in the clinical environment, and giving feedback to the students. After the program, the participants were surveyed regarding their experience during their preceptor role during the students' clinical rotation though the survey was not directly related to the training program. Majority of the responses reveal that the preceptors lacked knowledge about teaching concepts and student needs. The results also indicate the need to emphasize time management between student teaching and patient care. Although the study sample was small, with only 45 participants, and it was only conducted in one hospital, the study strengthens the notion that proper communication between the school and the preceptors are very important and, this, should be emphasized more (Rye, Boone, & Neal-Rice, 2007).

Effective Clinical Instructor Characteristics

Studies focusing on the clinical instructor attributes have widely been done in numerous health care education fields like nursing, athletic training, physical therapy, respiratory care, medicine, and radiography. Nevertheless, determining high qualities, characteristics, behaviors, and actions that influence the clinical success of the students are encouraged. Majority of the effective characteristics involve effective interpersonal relationships, professional competence, teaching ability, and evaluation skills (Ingrassia, 2011). Numerous studies have prioritized these common qualities differently. Some scholars argue that professional competence is the most

important characteristic (Johnsen & Aasgaard, 1999; Nahas, Nour, & al-Nobani, 1999). However, interpersonal relationships were deemed the most significant for others (Bergman & Gaitskill, 1990). Majority of the studies reviewed signify four necessary qualities of effective interpersonal relationships, professional competence, teaching ability, and evaluation skills to be successful in clinical teaching (Tang, 2005).

First, interpersonal relationship with the students shows the instructors' ability to interact and communicate with their students. Characteristics like "conveys confidence in," "is honest and direct with students," "respects the students," and "encourages students to ask questions or for help" suggest their interpersonal relationship. Initially, these set of characteristics were determined by Armington, Reinikka, and Creighton (1972), and were eventually confirmed by other succeeding studies (Bergman & Gaitskill, 1990; Brown, 1981; Knox & Mogan, 1985; Mogan & Knox, 1987; Nehring, 1990; Oermann, 1998; Sieh & Bell, 1994).

Secondly, teaching skills are also perceived as clinical teaching techniques that promote the critical thinking of students (Burns & Northcutt, 2009). Krichbaum's (1991) study, meanwhile, positive and enthusiastic attitude in teaching and learning were seen as effective teaching strategies. This is similar to Nehring's (1990) findings that suggest students' perception of their clinical teachers' effectiveness include clinical instructors must enjoy teaching, demonstrate clinical skills and judgment, and encourage mutual respect. These were deemed effective because it helps facilitate learning of the students within their respective clinical areas (Krichbaum, 1991; Nehring, 1990).

Moreover, another crucial characteristic of clinical instructors is evaluation skills. A study argues that fairness in grading is also perceived by many students as the most significant clinical instructor characteristics (Viverais-Dresler & Kutschke , 1992). The use of effective

evaluation techniques potentially increases the confidence of the students according to students and faculty (Bergman & Gatiskill, 1990; Knox & Mogan, 1985; Nehring, 1990; Sieh & Bell, 1994). Effective evaluation strategies include providing useful feedback to the students regarding their clinical performance; showcasing fairness during their evaluation process; and written assignments, as well as promoting student independence, correcting mistakes without belittlement, and communicating clear expectations (Benor & Leviyof, 1997; Nehring, 1990).

Effective Clinical Instructor Characteristics in Nursing

Clinical education serves as a medium used by the nursing faculty to help motivate the students' knowledge and skill acquisition in their clinical area. As a practice discipline, nursing necessitates a curriculum that is based on a set of theoretical framework that allows the students to mature and hone their clinical skills essential in their rendition of patient care. However, despite the abundance of research on clinical education, the criteria that determine the effectiveness of a clinical educator remains inadequately defined (Kelly, 2007). Nahas' (1999) study focused on the perception of undergraduate students in Jordan with regards to what comprises effective clinical teaching characteristics. Nahas used Brown's (1981) *Clinical Teacher Characteristics Instrument* (CTCI) as the tool in the study, with particular attention to three general dimensions of professional competence, relationship with students, and personal attribute. Four hundred fifty-two Jordanian undergraduate nursing students from second until fourth-year partook in the study. The study's result uncover that the nursing students perceive professional competence of their clinical instructor as the most important attribute. On the other hand, the finding is contrast to those found among Western-based studies. Likewise, it was discovered that the responses of the nursing students differed according to their academic year level. For example, second-year students view their relationship with their clinical instructor to

be the most significant while fourth-year nursing students claim personal qualities of the clinical instructors are more influential in their effectiveness. Nonetheless, the results significantly match the education level of the students and their cultural beliefs and values regarding education (Nahas, 1999).

Additionally, another study focusing on the effective and ineffective characteristics of clinical instructors according to student perceptions invited 214 students to participate. The study revealed that effective clinical instructors were those who possessed high professional competence, personality characteristics, interpersonal relationships, and teaching ability. A huge gap was also noted between effective and ineffective interpersonal relationships and personality characteristics. It can be derived from the findings that the attitude of the clinical instructors toward their students is the fundamental factor in determining the effectiveness or ineffectiveness of the clinical instructors, instead of their personal abilities as other studies suggest (Tang, Chou, & Chiang, 2005).

Lastly, a few nursing education literatures evaluated the effectiveness of clinical instructors based on the particular objectives and goals in hiring clinical educators. Heshamti (2010) did a study involving nursing students and faculty members in Iran to assess their perceptions on effective characteristics among clinical instructors. Through qualitative research methods, an interview of 10 nursing students and clinical instructor volunteers found five important categories: personal traits, meta-cognition, making clinical learning enjoyable, being a source of support, and being a role model. According to the researcher, effective clinical instructors are educators that were “in harmony with the spirit” of nursing, act as role models, and able to adopt a reflective approach, promote an enjoyable clinical learning experience for the

students, and are still able to teach a patient-centered care in different socio-cultural conditions in the nursing profession in Iran (Heshamti, 2010).

Effective Clinical Instructor Characteristics in Respiratory Therapy

In different healthcare professions, clinicians are habitually called to help in educating students. Respiratory therapy is one of those disciplines that depend greatly on clinical instructions and instructors. Many publications have addressed and stressed on the importance of clinical skills, personality, and teaching ability among clinical instructors. These characteristics should promote a productive learning environment in order for clinical teaching to be effective (Koss, 2003). Koss (2003) organized a survey that asked senior students to jot down 10 effective characteristics of clinical instructors. Seventeen of the most common responses were then collected into a survey and used a Likert scale to determine and rate the importance of each characteristic, with a rating of 4 for "very strongly" and 1 for "disagree." Junior and senior classes were then given the survey for pilot testing. The 17 most common effective attributes were the following: humor, outgoing, expertise, constructive criticism, seeks new experiences, student participation, physical appearance, time management, ease of communication, honesty, empathy, likes teaching, availability, professionalism, contract with non-RTs, boosts confidence, and current in the field. The findings of the study divulged that the students see the clinical instructors' knowledge and field expertise as the most important qualities in effective teaching (Koss, 2003).

In 2004, Koss continued the research and devised a survey consisting of 20 statements pertaining to characteristics and attributes that was mailed to Midwestern students enrolled in 35 programs. The participants were mostly females seventy-eight percent than males twenty-two and were averagely aged at 28 years old. An assessment of the survey revealed that the students

perceive the clinical instructor characteristic and attribute of promoting a strong educational environment as the most important. Moreover, the participants claim that clinical instructors are expected and should be knowledgeable, strong communicators, and encourage student participation and independent decision making. Lastly, sense of humor, hygiene, and communication skills were viewed as the least important clinical instructor characteristics (Koss, 2004).

Clinical Instruction in Physical Therapy

During physical therapy instruction, students need to complete thirty weeks of clinical instruction (CAPTE, 2009). According to the *American Physical Therapy Association* (APTA) (1997), the *Clinical Instructor Education and Credentialing Program* (CIECP) is a national training program created for physical therapy clinical instructors. On the other hand, physical therapy publications and literature that assessed the perception of students with regards to their clinical instructors' effectiveness in teaching and their behavior resulted to varied views (Emery, 1984; Jarski, Kulig, & Olson, 1989; Morren, Gordon, & Sawyer, 2008; Wetherbee, Nordrum, & Giles, 2008). For example, Jarski et al. (1989) addressed the interpersonal skills of clinical instructors as the highest ranking attribute according to 311 physical therapy students. Relatively, the study posits that the relationship between the clinical instructor and the students were defined as "open." This openness implies that the students were able to approach their instructors to ask for opinion and for help. Similarly, Emery's (1984) study found comparative results with 102 senior physical therapy students. Emery analyzed the views of students with regards to 29 crucial clinical instructor behaviors through the use of survey or questionnaire that divided 43 clinical instructor behaviors into four general categories, such as communication, interpersonal relations, professional skills, and teaching behaviors. The behaviors were

individually scored based on the student's perception of what was important in relation to the quality of their clinical training experience and how frequent their clinical instructor exhibited each behavior. The study later discovered that the students perceived all behaviors were significant and were relatively observed frequently with their clinical instructors. More importantly, the teaching behaviors that were seen to promote effective clinical instruction were: matching clinical teaching skills with student understanding and experience, good communication skills, constructive feedback, and training clinical instructors (Emery, 1984).

Summary

In conclusion, clinical education allows relative knowledge, skills, and values to be emanated by respiratory therapists. Thus, there is a need for effective clinical teaching behaviors and strategies to ensure that the students learn well and are prepared to adapt to varied clinical settings and experiences. It is, therefore, the responsibility of clinical educators or instructors to exhibit excellent behavior, knowledge, and skills needed in teaching. For future generations of respiratory therapists to become better, clinical instructors must possess effective clinical characteristics and behavior to advance the respiratory therapy education and clinical practice, as well as widen the competencies of respiratory therapists (Kacmarek, 2013; Rye & Boone, 2009).

In the end, clinical education in respiratory therapy must address the numerous objectives that have been derived from the vast number of studies and literature available. First, it is important to encourage effective clinical instructor characteristics to improve the attainment of required knowledge, enhanced skills, and positive attitudes, as well as to seek the best techniques that would prepare them for clinical practice in the health care setting today. The clinical instructors' professional knowledge, competence, and effective teaching characteristics are crucial to the outcomes of student learning. Due to the impact that clinical instructors have on

the students, it is significant to identify the effective teaching characteristics from the point of view of respiratory therapy academe so that they may improve and ease in effective clinical instruction in their respective respiratory therapy programs.

Chapter 3

Methodology

Instrumentation:

The survey instrument to be used in this study is the modified version of the Effective Radiography Clinical Instructor Characteristic (ERCIC) survey that was developed and published by Dr. Jennett M. Ingrassia (Ingrassia, 2011). After obtaining the author's permission to use the survey, the survey was modified in a way that will represent clinical education in respiratory therapy.

The survey for this study was asked both respiratory CIs and RT students to rank the importance of clinical instructor teaching characteristics. The characteristics listed in this survey were identified as the most important of those listed in surveys from similar studies in nursing, physical therapy and athletic training. The characteristics were divided into 4 categories. In the categories of competence, teaching ability, evaluation skills and interpersonal relationships, the ranking scale used was 5 (most important) to 1 (least important). Participants were permitted to use each ranking number only once within a category. Students were asked to indicate their age, gender and type of program. Through the survey, clinical instructors stated their age, gender, education level and years of experience as a respiratory therapist and as a clinical instructor.

Population and Source of Data:

There are seven respiratory care programs in Saudi Arabia including both of diploma and baccalaureate. Following the initial request, three educational institutions in Saudi Arabia responded favorably to participate in this study. While the population of this study includes both CIs and RT students, samples of this study were obtained from Prince Sultan Military College of Health Sciences (PSMCHS), University of Dammam (UOD), and King Saud University of Health Sciences (KSU-HS) in Saudi Arabia. Although there are a total of 160 students and 20 CIs in these 3 institutions,141 RT students and 15 CIs volunteered to participate in this study. While RT students were included in this study, exclusion criteria consisted of students from other levels of respiratory therapy programs, such as associate, diploma, and bridge. Inclusion criteria for clinical instructors included at least one year or more of experience in clinical education. The part-time CIs were excluded from this study.

Data collection:

Institutional review board (IRB) approval was obtained prior to data collection. The study employed a descriptive exploratory design with a self-reporting survey. A survey is a process of research that involves answering questions and is a common type of descriptive research (Brown, 2009). The survey design provided a means to collect data from students and clinical instructors about how they perceived the effective teaching characteristics of CIs that influenced clinical learning experiences of students in respiratory therapy education.

After obtaining the IRB approval, the researcher sent a personalized pre-notice letter to all study coordinators in Saudi Arabian institutions in order to identify potential dates and times that can be used to obtain informed consent and distribute the study survey to the participants of

the program. The pre-notice letter aimed to build anticipation and improve the implementation and response rate of the study. Since students and clinical instructors were subjects of this study, they were approached to determine eligibility; the researcher and the study coordinator screened participants. Subjects who passed the screen were provided a study informed consent and requested participation in the study. Effective enrollment in this study was dependent on subjects' willingness to take part. Through a respectful, approachable, caring, and compassionate attitude, we aimed to establish trust and rapport.

The researcher provided a clear explanation of the purpose of the study and explained, expected duration of the subject's participation, procedures to be followed, and the confidentiality. It was made known that the subject was not affected regardless of their decision to participate in this research. All information was presented as simply and straightforwardly as possible. The subject's understanding was assessed using open-ended questions. Both students and clinical instructors were also informed that they had the right to drop out of the study at any time. The researcher stated that subjects' records is kept confidential and asked if they have any questions about the study. All questions of primary caregivers was answered by the study coordinator, using an honest, simple, and straightforward approach. Then, each subject asked whether or not he/she would like to participate in the study. Once they understood this study and expressed willingness to participate, the study coordinator documented their consent. While the researcher distributed the survey to students in class, each clinical instructor was visited in their offices to determine their eligibility, informed them about the study, got their informed consent and had them complete the survey, if they agreed to participate in this study.

Each subject read the cover letter that explained what the study was about, why it was useful and important, how answers will be kept confidential, and whom to contact with

questions. The cover letter can be found in Appendix A. After reading the cover letter, the subjects completed the survey and returned it to the researcher.

Data Analysis:

The data analyzed using the statistical program of Statistical Package for the Social Sciences (SPSS) version 22. Descriptive statistics including means and standard deviations were performed to describe the ranking of CIs' and students' perceptions on effective teaching characteristics of CIs in respiratory care education. In addition, the independent t-test was used to compare perceptions of junior and senior students on effective teaching characteristics of CIs in Saudi Arabia.

CHAPTER IV

RESULTS

The purpose of the current study was to evaluate the perceived teaching characteristics of CIs and compare the perception of RT students with (CIs) with regards to the most significant characteristics suitable for clinical respiratory therapy education. Demographics of the sample and results of the statistical analysis were provided in this chapter.

Research Questions

1. Which characteristics of effective clinical instructors are recognized to be most important for respiratory therapy students?
2. Which characteristics of effective clinical instructors are recognized to be most important by clinical instructors?
3. How do students' perceptions vary depending on clinical hours they spend in their program of study?

Characteristics of the Sample

The sample of the current study was acquired from three universities in Saudi Arabia. The respondents consisted of 141 RT students and 15 CIs with a response rate of 71% for RT students and 75 %, for CIs respectively. While 68.1% of students were male, 32% included female students. 43% were the first year students in the program, 57% consisted of the 2nd year senior RT students. A demographics of students and clinical instructors are presented in Tables 1 and 2, respectively.

Table 1. Demographic data of respiratory therapy students:

Demographics	**n, (%)**	**Mean ±SD**
Gender	96 (68%)	
Male	45 (32%)	
Female		
Previous Degree	37 (26%)	
Level in Program		
Junior	60 (43%)	
Senior	81 (57%)	
Age		21.6 ± 2.9

Whereas 53% of CIs have had six years or more experience as a respiratory therapist, only 47% of them have had teaching experience as a CI for 3 or more years. Also it is important to note that most CIs (53.3%, n=8) who participated in this study were from the University of Dammam. The age of the majority of CIs (60%) ranged from 25 to 30 years old while 33.3% was between 31 and 39 years old. Only one CI was younger than 26 years old.

Table 2. Demographic data of Clinical Instructors

Demographics	n, (%)
Gender	
Male	5 (33.3%)
Female	10 (66.7%)
Age	
Under 26 years old	1(6.7%)
26-30 years old	9 (60%)
31-39 years old	5 (33.3%)
Years of Experience as RT	
2-5 years	7 (46.7%)
6-10 years	8 (53.3%)
Years of experience as CI	
1-2 years	5 (33.3%)
3-5 years	6 (40%)
6-10 years	4 (26.7%)

Additionally, the number of clinical courses completed by students varied. For example, second-year program students were required to complete more clinical courses in comparison with first-year students. The number of completed clinical programs by students ranged from one to four. While almost 70% of students completed 1 to 3 clinical courses the rest of the students (30%) stated that they completed 3 to 4 clinical courses. Thirty-seven of the RT students attended other education programs that involved clinical instruction.

Figure 1 shows the opinions of the RT students regarding the best student-CI ratio. Forty percent (n=58) of students preferred to have 4 to 1 ratio. However, a 3:1 student-CI ratio was seen favorably by 38% (n=53) of the survey respondents. Moreover, 13% of students rated 5:1 student-CI ratio to be the next favorable ratio; followed by 6% (n=9) of the participants who

rated 5:1 student-CI ratio to be acceptable; and 6% (n=2) of students preferred 2:1. Finally, one student believed 6:1 was better.

Figure 1. Students Perception Of Students- Clinical Instructor Ratio

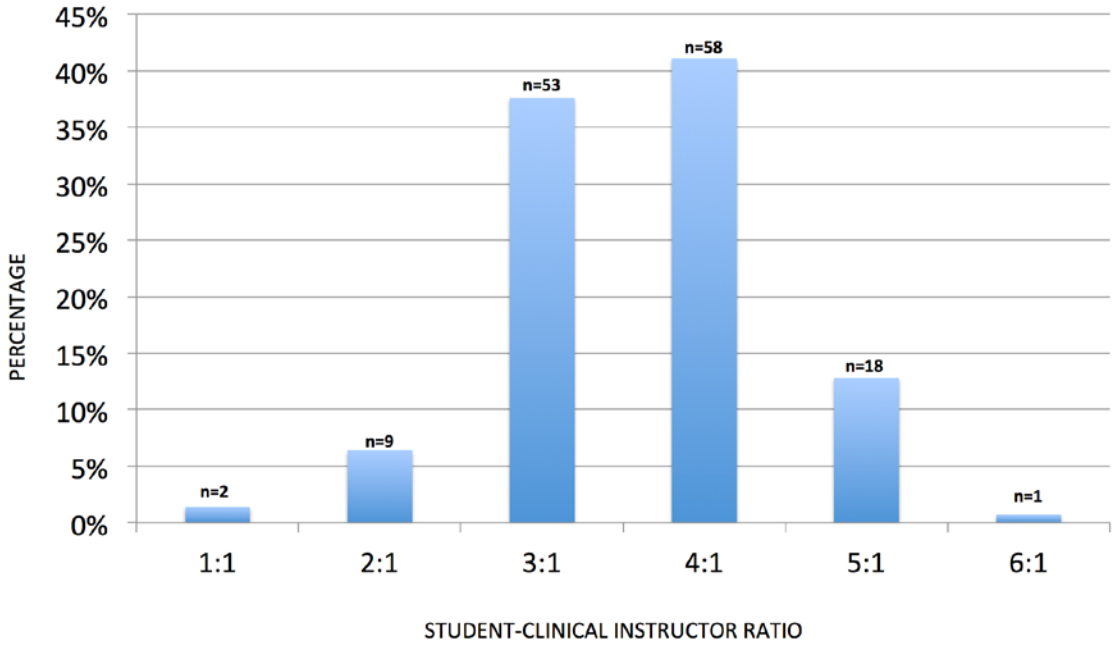
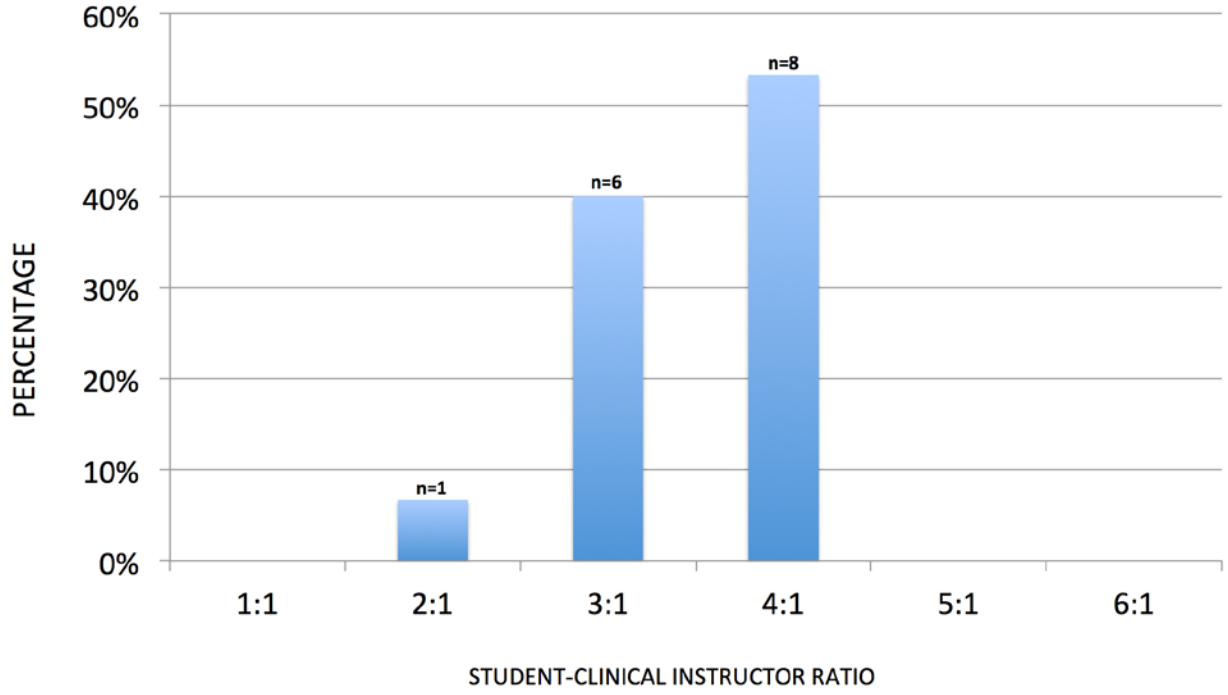


Figure 2 shows the opinions of the CI regarding the best student-CI ratio. 53% of CIs preferred to have 4:1 ratio, while 40% of them thought that 3:1 student-CI ratio was the best for optimum clinical education in respiratory care.. While only 1 clinical instructor (7%) chose 2:1 student-CI ratio and 6:1, 5:1 and 1:1 student-CI ratios were not selected by CIs who participated in this study.

Figure 2. Clinical Instructors Perception Of Students- Clinical Instructor Ratio



Findings Related to Research Question 1

The first research question asked, "Which characteristics of effective clinical instructors are perceived to be most important by respiratory therapy students?" Table 3 shows the means (*M)* and standard deviation (SD) of the10 most important effective clinical teaching characteristics according to RT students. The results were tabulated and then presented in Table 3. It is divided into the main category, a description of the teaching behavior, and the associated category for every teaching behavior. As shown in Table 3, RT students classified "competency in demonstrating knowledge" as the most effective teaching characteristic with a mean score of 4.6 ± .67.

Table 3. 10 Most Effective Clinical Teaching Behaviors Ranked by Respiratory Therapy Students

Category	Description	Mean ±SD
Competence	Demonstrates knowledge and clinical skill in clinical situations	4.6 ±.67
Evaluation Skills	Provides constructive feedback on students' performance	4.4 ±.78
Teaching Ability	Explains concepts and decisions clearly	4.4 ±.75
Evaluation Skills	Demonstrates objectivity and fairness	4.3 ±.75
Competence	Provides high quality patient care	4.3 ±.83
Interpersonal Relationship	Provides support and encouragement to help build students' confidence	4.3 ±.99
Interpersonal Relationship	Is approachable, accessible, and available to the students during clinical hours	4.2 ±.92
Teaching Ability	Develops critical thinking skills	4.1 ±1.0
Teaching Ability	Encourages students to ask questions	4.0 ±.95
Interpersonal Relationship	Encourages and practices mutual respect between the students and other medical workers	4.0 ±.96

Findings Related to Research Question 2

The second question asked, "Which characteristics' of effective clinical instructors are perceived to be most important by clinical instructors?" Table 4 illustrates the mean scores (*M)* and standard deviation (*SD)* of 10 of the most important effective clinical teaching characteristics ranked by CIs. Data results were tabulated and categorized according to the main category, a description of the teaching behavior, and the associated category for every teaching behavior.

Like RT students, CIs also stated that "competency in demonstrating knowledge" is the most important teaching characteristics of CIs in respiratory therapy education (4.7± .45).

Table 4. 10 Most Effective Clinical Teaching Behaviors Ranked by Clinical Instructors

Category	Description	Mean ±SD
Competence	Demonstrates knowledge and clinical skill in clinical situations	4.7 ±.45
Competence	Provides high quality patient care	4.6, ±.81
Competence	Facilitates students' awareness of their professional responsibility	4.6 ±.82
Competence	Displays and promotes professionalism in the workplace	4.6 ±.63
Evaluation Skills	Provides constructive feedback on students' performance	4.5 ±.51
Teaching Ability	Explains concepts and decisions clearly	4.5 ±.51
Evaluation Skills	Provides suggestions for improvement	4.5 ±.63
Interpersonal Relationships	Demonstrates self-control, flexibility, patience, and a sense of humor	4.4 ±.83
Interpersonal Relationships	Provides support and encouragement to help build students' confidence	4.4 ±.63
Interpersonal Relationships	Encourages and practices mutual respect between the students and other medical workers	4.4 ±.63

Findings Related to Research Question 3

The fourth research question asked, "How do students' perceptions vary depending on clinical hours they spend in their program of study?" Table 6 shows significant differences in teaching characteristics ranked by junior and senior RT students.

Table 5. Significant Differences in Teaching Characteristics Ranked by First and Second Students

Characteristics	Description	Junior Mean ±SD	Senior Mean ±SD	Pvalue
Competence1	Demonstrates knowledge and clinical skill in clinical situations	4.7 ±.42	4.4 ±.79	.01
Competence4	Facilitates students' awareness of their professional responsibility	4.3,±.89	3.8 ±1.1	.00
Teaching Ability4	Develops critical thinking skills	4.3 ±.86	3.9 ±1.1	.01
Evaluation Skills3	Provides constructive feedback on students' performance	4.5 ±.67	4.3 ±.84	.05
Evaluation Skills4	Provides suggestions for improvement	4.1 ±.92	3.8 ±1.1	.05
Interpersonal Relationships2	Encourages and practices mutual respect between the students and other medical workers	4.3 ±.86	3.8 ±1.0	.00
Interpersonal Relationships4	Demonstrates self-control, flexibility, patience, and a sense of humor	4.2 ±.60	3.7 ±1.1	.00

*Significant at $P < .05$

Chapter V

DISCUSSION

The purpose of this study was to identify the perceptions of both clinical instructors and RT students at various academic levels in Saudi Arabia, particularly the effective characteristics of clinical instructors. The questions that formed the base of the study include:

1. Which characteristics of effective clinical instructors are recognized to be most important by respiratory therapy students?
2. Which characteristics of effective clinical instructors are recognized to be most important by clinical instructors?
3. How do students' perceptions vary depending to clinical hours they spend in their program of study?

Findings Related To Research Question 1

The first question asked, "Which characteristics of effective clinical instructors are recognized to be most important by respiratory therapy students?" According to the results obtained from the study, the respiratory therapy students viewed the competence of the clinical instructors to be most important. This means that the students valued the ability of the clinical instructor to demonstrate the knowledge and clinical skill in a clinical situation to be very valuable in their learning experience. Radiography professions have also reported that students rank competence and interpersonal relationship very high (Ingrassia, 2011; Williams & Webb, 1994). According to Alasmari the competence of the clinical instructor affects the ability of students to grasp and be able to ask questions during the sessions (Alasmari 2014).

Evaluation skills presented by the clinical instructor were rated as the second most effective characteristic of an effective clinical instructor. This simply describes the ease in which the instructor provides positive and constructive feedback on students' performance. The third ranked characteristic was the teaching ability of the clinical instructor that illustrated their explanation of concepts and decisions in a clear manner. Evaluation skills that assist the clinical instructor in demonstrating objectivity and fairness were ranked top five. Finally the teaching skills of the clinical instructor in matters such as developing critical thinking among the students and encouraging the students to ask questions to enlarge their scope of understanding.

Through critical analysis, one would realize that the most important aspects of the clinical instructor characteristics lie within their professional competence, interpersonal relationship, evaluation skills and teaching abilities (Alasmari, 2014). A report that has been published stated that professional competence was rated by most students as a vital characteristic which was followed closely by the relationship between the instructor and the students (Girija, 2013).

Findings Related To Question 2

The second question asked, "Which characteristics of effective clinical instructors are recognized to be most important by clinical instructors?" The results obtained from the study show that according to the clinical instructors, competence that is the demonstration of knowledge and clinical skills in clinical situations is the most effective characteristic. It is however followed closely by the provision of high quality patient care and the facilitation of students on the awareness of their professional ability.

The clinical instructors did not disagree with importance of the ability of the clinical instructor to maintain a level of respect among the students and other medical professionals. Similar to this finding would be in nursing education where instructors expressed their

appreciation of the characteristics that include positivity, professionalism and offering proper support to the students as important (Hanson & Stenvig ,2008).

Findings Related To Question 3

The fourth question was, "How do students' perceptions vary depending to clinical hours they spend in their program of study?" Junior RT students rated the competence of the clinical instructors in their demonstration of knowledge and clinical skills higher than senior RT students, which complements previous studies (Gignac-Caille and Oermann, 2001; Sieh & Bell, 1994).. This great difference was not however, felt as much in the evaluation skills of the clinical instructors in the provision of constructive feedback on students' performance and providing suggestions for improvement.

According to the results shown in Table 5, the ranking between the junior and the senior RT students show that the perception of the characteristics of clinical instructors reduces as they advance. Though the rate of change varies, this shows that their view on this particular attributes of teaching draws them nearer or closer to the ideology of the clinical instructors and the faculty (Bergman & Gaitskill, 1990). According to Alasmari, methods of analyzing these trends vary but using mean scores that are taken periodically would assist in understanding the levels in which different perceptions change to address the issues that may be causing the shift in the perceptions (Alasmari, 2014).

Implications for Research

Results obtained from this study assist clinical instructors to understand the perception of the RT students concerning their characteristics. This is very important in ensuring that the clinical instructors concentrate on the positives identified by the students as they work on the negatives. Also, the data obtained for the correlation between the perception of the RT students

and the clinical instructors shows the difference in perception between the two groups that might be a source of conflict. This shows the areas that need to be worked on to ensure that the learning environment is made conducive for both the RT students and the clinical instructors. Finally, understanding the changes in perception between the junior and the senior students would be a good indicator for the clinical instructors to ensure that they maximize on the characteristics that work best in the different levels.

Recommendation for Future Study

More Information on the perceptions of faculty and respiratory therapy administrator on effect characteristics of CIs are needed and therefore a study on the perception of them would assist in getting a more comprehensive data. Also, more study in this line should be carried out to validate the data obtained in this study. In addition, due to a deficiency in RT education all over the world we recommend to enhance research in respiratory field in every country.

Limitation

The small number of respondents who were selected from only the three institutions that positively responded to the request played as a limitation in this study. Only three Saudi institutions volunteered to participate in this study, so it cannot be generalized to all schools of respiratory therapy.

Conclusion

Competence on demonstrating knowledge was identified as the leading characteristics of CIs by RT students and CIs. However, their ranking on teaching characteristics of CIs differs. There are significant differences between the perceptions of junior and senior RT students on effective teaching characteristics of CIs. Further research is warranted.

Appendix A

Dear Clinical Instructor

You are invited to participate in a study entitled " *Clinical Instructors and undergraduate Students Perceptions of Effective Characteristics of Clinical Instructors in Saudi Arabia*". The purpose of this study is to determine the effective characteristics of clinical instructors. We are trying to better understand the characteristics that are deemed most and least important by clinical instructors and undergraduate students. Fahad Alahmadi, a master degree student from the Department of Respiratory Therapy at Georgia State University, under the advisement of Dr. Arzu Ari, will conduct the study. The information you provide will be used in a thesis prepared by Fahad Alahmadi and supervised by Dr. Arzu Ari.

It is completely voluntary to take part and participate in the study. If you decide to participate in the study you will be asked to complete the survey, the survey should not take more than ten minutes. However, if you decide not to participate, you may stop taking the survey at any time without penalty or loss of benefits to which you are otherwise entitled, simply submit the survey at any time.

Your responses will be kept strictly confidential, as we will not use names and codes to identify you or your response. To better assure confidentiality, all surveys will be destroyed after all surveys have been collected. We hope that you will submit a completed survey.

When we publish our findings, we will report our findings based on groups, not on individuals. If you would like an executive summary, please send your information to falahmadi1@student.gsu.edu. If you have any questions about this research, now or in the future, please contact Fahad Alahmadi falahmadi1@student.gsu.edu or Dr. Arzu Ari at aari1@gsu.edu The department's contact information can be found at the bottom of this page.

Sincerely,

Fahad Alahmadi

Department of Respiratory Therapy

Georgia State University

P.O. Box 4019

Atlanta, GA 30302

Part 1: Demographic data for Clinical Instructors:

1. Check the number of years you have practiced as a respiratory therapist:
_____ 2 – 5
_____ 6 – 10
_____ 11 – 15
_____ 16 – 20
_____ 21 or more

2. Check the number of years you have been a clinical instructor.
_____ 1 – 2
_____ 3 – 5
_____ 6 – 10
_____ 11 or more

3. Please check your age range.
_____ Under 25 years
_____ 26 – 30
_____ 31 – 39
_____ 40 – 50
_____ 51 or over

4. Gender
_____ Male
_____ Female

5. In your opinion regarding good ratio of Students to Clinical Instructor is:

1:1 □ 2:1 □ 3:1 □ 4:1 □ 5:1 □ 6:1□

Appendix B

Dear Respiratory Therapy Student,

You are invited to participate in a research study involving undergraduate respiratory therapy students who has had clinical training. This study's purpose is to identify the effective characteristics of clinical instructors.

Fahad Alahmadi is conducting this research study as part of the requirements of the Master Degree in Respiratory Therapy from the *Department of Respiratory Therapy* at *Georgia State University*, under the guidance of Dr.Arzu Ari. The information acquired through this research will benefit the respiratory therapy clinical instructors in identifying which characteristics are most effecting in facilitating student learning.

Your participation that would benefit further research in this area is greatly appreciated. Should you decide to participate, you will be asked to complete the following survey. It will take approximately 10 minutes to complete. Likewise, your participation is strictly voluntary while your refusal or cessation in completing the survey at anytime is without penalty or loss of benefits – to which you are otherwise entitled.

Please be informed that your responses and identity will solely be used for research purposes and, rest assured, will be strictly held confidentially. In order to protect your confidentiality, no name or code will be used to identify you or the answers in your survey. Afterwards, the surveys will be discarded after all the surveys have been completed and collected. We hope you will answer the survey completely. However, if you choose not to participate, you may withdraw at any time by submitting an incomplete or a blank survey.

The information collected from this study may be published in journals and presented at professional meetings. In addition, this study will not cost the participant in any way aside from the time spent in completing it. Likewise, there is no compensation or known risk associated with your participation. There is no harm or discomfort foreseen in answering the survey. On the other hand, should the participant feel uncomfortable in completing the survey, simply submit a blank form.

If you have any questions about this research, now or in the future, please contact Fahad Alahmadi falahmadi@student.gsu.edu or Dr.Arzu Ari aari1@gsu.edu. The department's mailing address can be found at the bottom of this page.

Please note: Completion and submission of this survey implies that you have read this information and consent to participate in the research.

Thank you in advance for your cooperation. Your participation makes an important contribution to the future of respiratory clinical education.

Sincerely,

Fahad Alahmadi

Department of Respiratory Therapy

Georgia State University

P.O. Box 4019

Atlanta, GA 30302

Part 1: Demographics Characteristics for student:

1. Indicate your age_____
2. Number of clinical courses completed_____ course/s (as of today).
3. Gender: (please circle one)

   (a) Male.

   (b) Female.
4. Year/level in program: ___Second year (junior) ____Third year (senior)

   Have you attended any previous educational program/programs that utilize clinical instruction?

   ____ Yes

   ____ No
5. Do you possess a certificate of completion or degree from another clinical program:

   ____ Yes

   ____ No

   If so, please list here:
6. How many clinical instructors/preceptors have you been exposed to during your course of respiratory therapy education? _____.
7. In your opinion regarding good ratio of Students to Clinical Instructor is:

   1:1 □ 2:1 □ 3:1 □ 4:1 □ 5:1 □ 6:1□

Part 2 Survey: The Importance of Effective Behavioral Characteristics of Clinical Instructors

Using each number only once, please rank the importance of the following clinical instructor behaviors from most important (#5) to least important (#1):

I.	**COMPETENCE – The Clinical Instructor:**	**Most Important (5)**	**Important (4)**	**Neutral/ Uncertain (3)**	**Less Important (2)**	**Unimportant (1)**
1	Demonstrates knowledge and clinical skill in clinical situations					
2	Provides high quality patient care					
3	Displays and promotes professionalism in the workplace					
4	Facilitates students' awareness of their professional responsibility					
II.	**TEACHING ABILITY – The Clinical Instructor:**	**Most Important (5)**	**Important (4)**	**Neutral/ Uncertain (3)**	**Less Important (2)**	**Unimportant (1)**
1	Explains concepts and decisions clearly by emphasizing what is essential in clinical practice and clearly communicating expectations for students					
2	Reinforces the relationship of theory to practice by discussing practical application of knowledge and skills to clinical situations					
3	Encourages students to ask questions and to ask for assistance when needed					

4	Develops critical thinking skills by providing opportunities for students to consider alternative methods for clinical procedures					
5	Helps students achieve competency and maintain proficiency by providing practice opportunities during clinical time					
6	Encourages students to seek challenging opportunities during clinical rotations					
III.	**EVALUATION SKILLS – The Clinical Instructor:**	**Most Important (5)**	**Important (4)**	**Neutral/ Uncertain (3)**	**Less Important (2)**	**Unimportant (1)**
1	Demonstrates objectivity and fairness when evaluating students' clinical performance					
2	Avoids criticizing students in front of others					
3	Provides constructive feedback on students' performance					
4	Provides suggestions for improvement					
IV.	**INTERPERSONAL RELATIONSHIPS – The Clinical Instructor:**	**Most Important (5)**	**Important (4)**	**Neutral/ Uncertain (3)**	**Less Important (2)**	**Unimportant (1)**
1	Is approachable, accessible, and available to the students during clinical hours					

2	Encourages and practices mutual respect between the students and the technologists and other medical workers					
3	Provides support and encouragement to help build students' confidence					
4	Demonstrates self control, flexibility, patience, and a sense of humor					

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